U.S. Patent Application Serial No. 09/830,232
Reply to Office Action dated February 7, 2006

## Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application:

## Listing of Claims:

1-8. (Cancelled)

9. (Currently Amended) A device for the reception of a multicarrier signal, formed by a set of carrier frequencies, said device implementing at least two reception paths supplied with data flows, each conveying a same source symbol ($x_k(n)$), each of said reception paths comprising ~~estimation means~~ an estimator associating with each source symbol received, an estimated path value and a corresponding ^path confidence information element, wherein said source symbols are conveyed by a subset of said set of carrier frequencies, said device comprising means for ~~combination of~~ combining said estimated path values delivering:

an adapted estimated value, obtained from said estimated path values, in taking account of said ^corresponding path confidence information ^element to weight said estimated path values; and

an adapted confidence information element, ~~and~~ said device further comprising:

a weighted-input ~~decoding means~~ decoder supplied by said adapted estimated value, wherein said means for ~~the combination~~ combining computes said adapted estimated value as follows:

$$\hat{x}_{Adap,n} = \left( \sum_{i=1}^{N} cnfd_{i,n} \times \hat{x}_{i,n} \right) / \left( \sum_{i=1}^{N} cnfd_{i,n} \right)$$

where:

$\hat{x}_{i,n}$    is the estimated value of the symbol received on the path $i$;

$cnfd_{i,n}$   is the corresponding ^path confidence information element; and

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$N$      is the number of paths.

4 ~~10.~~      (Currently Amended) A device for the reception of a multicarrier signal, formed by a set

of carrier frequencies, said device implementing at least two reception paths supplied with data

flows, each conveying a same source symbol ($x_k(n)$), each of said reception paths comprising

~~estimation means~~ an estimator associating with each source symbol received, an estimated path

value and a corresponding *path* confidence information element,

said source symbols being conveyed by a subset of said set of carrier frequencies,

said device comprising means for ~~combination of~~ combining said estimated path values

delivering:

an adapted estimated value, obtained from said estimated path values, in taking account

of said corresponding path confidence information, *element* to weight said estimated path values, and;

an adapted confidence information element, as a sum of said path confidence information

elements, ~~and~~ said device further comprising:

a weighted-input ~~decoding means~~ decoder supplied by said adapted estimated value,

wherein said means for ~~combination~~ combining computes said adapted confidence information

element as follows:

$$cnfd_{Adap,n} = \sum_{i-1}^{N} cnfd_{i,n}$$

where:

$cnfd_{i,n}$  is the corresponding *path* confidence information element associated with the path $i$;
and

$N$      is the number of *paths*.

2 ~~11.~~      (Previously Presented) A device for reception according to claim 9', wherein the

reception device implements at least two antennas supplying distinct reception paths.

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3 ~~12.~~ (Currently Amended) A device for reception according to claim ~~9~~ 1, wherein each of said reception paths comprises a first module shaping and demodulating the received signal and a second module determining said estimated path values and said corresponding confidence information elements, said device further comprising a single module supplied by said second module of each reception path, and providing for said means for ~~combination~~ combining said adapted estimated values and said weighted-input ~~decoding means~~ decoder supplied with said adapted estimated value.

5 ~~13.~~ (Previously Presented) A device for reception according to claim ~~10~~ 4, wherein the reception device implements at least two antennas supplying distinct reception paths.

6 ~~14.~~ (Currently Amended) A device for reception according to claim ~~10~~ 4, wherein each of said reception paths comprises a first module shaping and demodulating the received signal and a second module determining said estimated path values and said corresponding confidence information elements, said device further comprising a single module supplied by said second module of each reception path, and providing for said means for ~~combination~~ combining delivering said adapted estimated values and said weighted-input ~~decoding means~~ decoder supplied with said adapted estimated value.

7 ~~15.~~ (Currently Amended) A method for the reception of a multicarrier signal, ~~former~~ formed by a set of carrier frequencies transmitted simultaneously, implementing at least two reception paths supplied with data flows, each conveying the same source symbols, each of said paths implementing a step of ~~estimation of the~~ estimating of a transmission channel associating, with each source symbol received, an estimated path value and a corresponding path confidence information element a source symbol being conveyed by a subset of said set of carrier frequencies, said method comprising:

        a combination step of delivering:

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an adapted estimated value, obtained from said estimated path values in taking account of said <u>corresponding</u> path confidence information <u>element</u> to weight said estimated path values; and

an adapted confidence information element with each of said adapted estimated values, wherein said adapted estimated value is computed as follows:

$$\hat{x}_{Adap,n} = \left( \sum_{i=1}^{N} cnfd_{i,n} \times \hat{x}_{i,n} \right) \Big/ \left( \sum_{i=1}^{N} cnfd_{i,n} \right)$$

where:

    $\hat{x}_{i,n}$    is the estimated value of the symbol received on the path $i$,

    $cnfd_{i,n}$  is the corresponding path confidence information element, and

    $N$      is the number of paths; and

a step of weighted-input decoding, ~~supplied by~~ <u>taking into account</u> said adapted estimated values.

8 ~~16.~~ (Currently Amended) A method for the reception of a multicarrier signal, ~~former~~ <u>formed</u> by a set of carrier frequencies transmitted simultaneously, implementing at least two reception paths supplied with data flows, each conveying the same source symbols, each of said paths implementing a step of ~~estimation of the~~ <u>estimating of a</u> transmission channel associating, with each source symbol received, an estimated path value and a corresponding path confidence information element, a source symbol being conveyed by a subset of said set of carrier frequencies, said method comprising:

combining and delivering:

an adapted estimated value, obtained from said estimated path values in taking account of said <u>corresponding</u> path confidence information <u>element</u> to weight said estimated path values, and

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an adapted confidence information element with each of said adapted estimated values, wherein said adapted confidence information element is computed as follows:

$$cnfd_{Adap.n} = \sum_{i=1}^{N} cnfd_{i,n}$$

where:

$cnfd_{i,n}$ is the <u>corresponding</u> <sub>path</sub> confidence information element associated with the path $i$, and

$N$ is the number of paths; and

weighted-input decoding, ~~supplied by~~ <u>taking into account</u> said adapted estimated values.

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